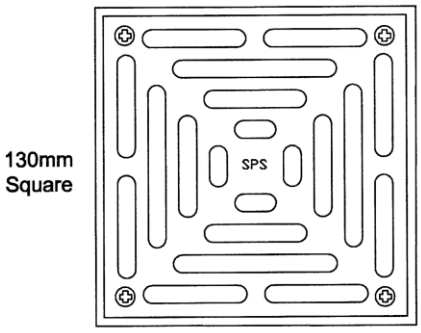
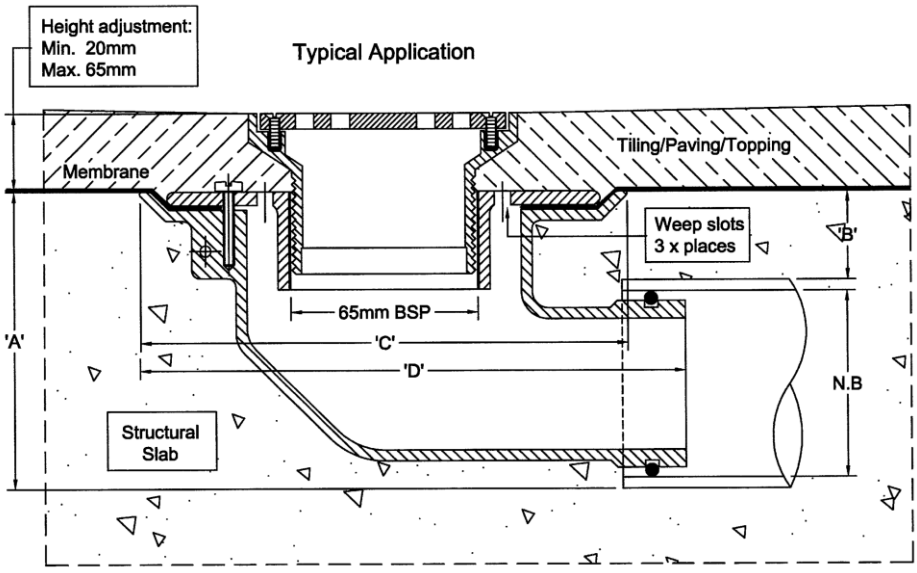
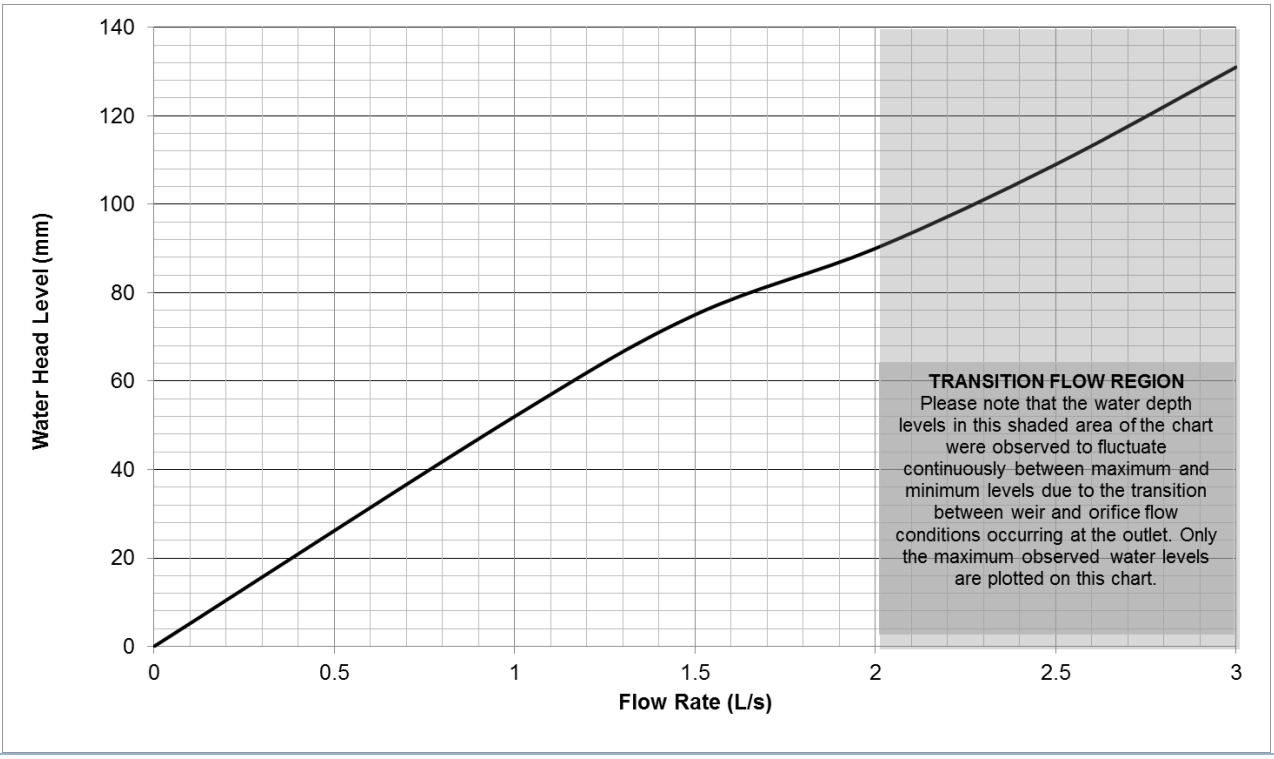
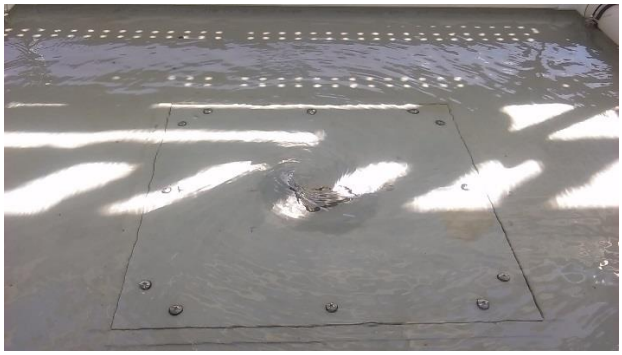
OUTLET PERFORMANCE CERTIFICATE ID: SPS012 - Q130S4/C90

Test Results	ID: SPS012
Description	SPS Vari-Level Drains – 90^0 Outlet
Drain Type	130mm Square Side Outlet Drain
Model	Q130S4/C90
Outlet Size	65NB
Test Date	23rd August 2016
Grate Drawing	 SPS Catalogue Ref: 4.04
Housing Drawing	
Drain Pipe Configuration	Due to the side entry 90 degree bend design of the housing the horizontal pipe configuration was modified to suit the housing. The 90 degree bend configuration was omitted from this test.

Flow Characteristic Curve – Q130S4/C90





Weir flow - 1 L/s (50mm)

Surcharged Flow - 2.5 L/s (110mm)

Observation Comments:

- A concentric swirl pattern was observed which indicated weir flow conditions, with the water head level stabilising at each flow rate setpoint from 0-2.0 L/s.
- At 2.5 L/s a transition from swirl motion to vortex flow was observed, as the air core decreased to approximately 10mm Diameter and moved to the side of the grate. At 3.0 L/s the vortex surcharged and transitioned to orifice conditions were characterised by the water level surging between 30-90mm.
- The maximum flow limit to maintain weir flow conditions is 2.0 L/s.

I hereby certify that the test results presented on this outlet performance certificate are true and correct and were obtained using recognised AHSCA Gutter Outlet Testing procedures.

Dr Terry Lucke,
Chief Researcher:

Date: 16th November 2016

Mark Alexander,
AHSCA Foundation Chairman:

Date: 16th November 2016